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Snow trend analysis and future evolution in the Pyrenees

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An analysis of the current and future evolution of the snowpack in the Pyrenees with climate change has been led in the frame of the Intereg ClimPy project (2016-2019), aiming to the development of the Pyrenean Observatory of Climate change (OPCC).
Several original datasets have been built and used to hightlight the current and future snow trends in the Pyrenees. First, an inventory of snow height data has been achieved and around twenty long daily series (more then 30 years) have been identified. A new method for data estimating has been defined from a specific configuration of the snow model Crocus, using an assimilation function of the snow height observations. Several snow indices have been calculated and analysed in terms of climate trends.
Then, a reanalysis of the snowpack in the Pyrenees computed with the SAFRAN/CROCUS model, available since 1958, has been validated with two observational references : in situ series and the MODIS dataset. This reanalysis allowed to complete the snow trends for the whole massif (all areas and all elevations) by considering the weather types aiming to hightlight the dynamical effects on the snow variability.
For the future, a set of snow climate projections have been provided from the EUROCORDEX ensemble, bias corrected with the Safran reanalysis, forcing the snow model Crocus on the Pyrenees. Several indicators have been built to analyse the evolution of the snow mean conditions and uncertainties according to the time periods, the parameters, the climate models or scenarios.
This presentation will also focus on the data access and results, especially through the new OPCC geoportal recently developed.